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ABSTRACT

The Planning, Monitoring and Implementing (PMI) Evaluation Model for Decision-Making was used by the District of Columbia Public Schools to monitor the efforts of their Office of Educational Technology in providing direction and coordination for computer related activities, and in planning and implementing educational television (ITV) projects in mathematics and science. The target population included seventh grade mathematics and science students and teachers in eight pilot schools for the seventh grade Mathematics and Science Project, and kindergarten students and teachers in 15 schools for the Writing-to-Read project. Included are: (1) project summary and findings; (2) background and project objectives; (3) a description of the project; (4) the external evaluation design; (5) the program results; and (6) appendices. Appended materials include the evaluation model schema; summaries of teachers' implementation of the Writing-to-Read Program based on a configuration checklist and levels-of-use interviews; and results of teacher questionnaires on the Writing-to-Read program, including writing and typing components, classroom management questions, and teacher aide questions. Findings show that while there is little empirical evidence to evaluate its implementation, the ITV project seems to be functioning well; in addition, the majority of Writing-to-Read teachers are implementing the program in an ideal fashion and students have responded favorably to it. (JB)

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EDUCATIONAL TECHNOLOGY

FINAL EVALUATION REPORT E.C.I.A CHAPTER 2

SEPTEMBER 1985

FLORETTA D. Mc KENZIE
SUPERINTENDENT OF SCHOOLS

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EDUCATIONAL TECHNOLOGY

FINAL REPORT

1984-1985

Prepared by
Division of Quality Assurance

1984-1985

EDUCATIONAL TECHNOLOGY

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TABLE OF CONTENTS

	Page
SUMMARY AND FINDINGS	iv
Chapter	
I. BACKGROUND AND PROJECT OBJECTIVES	
Introduction	1
Description of the Project	1
II. EXTERNAL EVALUATION DESIGN - PLANNING, MONITORING AND IMPLEMENTING (PMI) EVALUATION MODEL FOR DECISION-MAKING	3
III. RESULTS	
Narrative	5
PMI Inputs, Processes and Outcomes	
Objective A	9
Objective B	15
Objective C	22
IV. APPENDICES	
A. Evaluation Model Schema.....	27
B. Teachers' Implementation of Writing-to-..... Read Program: Configuration Checklist	29
C. Teachers' Implementation of Writing-to-..... Read Program: Levels-of-Use Interviews	31
D. Teacher Survey: Writing Questions.....	32
E. Teacher Survey: Typing Questions.....	35
F. Teacher Survey: Management Questions (Pt.1)....	37
G. Teacher Survey: Aide Questions.....	40

SUMMARY AND FINDINGS

Title

Educational Technology

Project Director

Kyo Jhin

Project Locations

Shepherd Elementary School
14th Street and Kalmia Road, N.W.
Washington, D.C.

Woodridge Elementary School
Carlton and Central Avenues, N.E.
Washington, D.C.

Target Population

The target population for the entire Educational Technology program includes 90,000 students in regular programs, special education, career development and continuing education, and all teachers and administrators. The target populations for the two particular Educational Technology programs under review, in this report, include: 7th grade math and science students in 8 pilot schools, for the Instructional Television 7th grade Mathematics and Science Project (ITV); and kindergarten students in 15 schools, for the Writing-to-Read project.

Background

The Division of Educational Technology was established to implement the "Computer Literacy Five-Year Plan SY 1983-87" developed in 1982, and to organize other technologies partially assisted by ECIA Chapter 2 funds. Since the first full year of the project, 1983-84, the emphasis of the Division has been on computer literacy and educational technology.

Description of Project

The 1983-84 school year was a planning phase for the two emphases of computer literacy and educational technology. The Division of Educational Technology provided direction to, and coordination of computer-related activities in the DCPS through the Writing-To-Read and Summer Computer Camp programs. The planning of Instructional Television (ITV) was also carried out at that time. The focus of evaluation for the 1984-85 school year is on the implementation of the Mathematics and Science Project in 8 pilot schools and the Writing-To-Read program operating in 15 schools.

Stated Objectives

A. The Division of Educational Technology will advance instructional television in the DCPS as demonstrated by the implementation of the Instructional Television 7th grade Mathematics and Science Project (ITV) in 8 pilot schools.

B. A majority of the DCPS kindergarten teachers in the Writing-To-Read program will demonstrate that they are implementing the program as designed, during the 1984-85 school year.

C. At the end of one year, students of DCPS kindergarten teachers using the Writing-To-Read program, will increase their creative writing achievement at a greater rate, as measured by a standardized readiness test and a rated writing instrument.

Evaluation

The evaluation follows the Planning, Monitoring, and Implementing (PMI) Evaluation Model for Decision-Making which was developed by the Division of Quality Assurance, District of Columbia Public Schools.

Findings

1. A manual, which matches CBC objectives with available instructional television packages, was compiled and distributed to teachers in the ITV program. Responses to the manual have been positive.

2. There is some indication that the manual may need to be updated and expanded.

3. Due to the low return rate of questionnaires it was not possible to determine accurately whether ITV teachers had used videotapes for at least 10 CBC objectives. Of the nine questionnaires returned only two reported using ITV materials for at least 10 CBC objectives.

4. The ITV project is reported by teachers to be functioning well. However, possibly due to staff turnover and a resulting lack of contact with schools, there is little empirical evidence to evaluate its implementation.

5. Specifically, data need to be collected in the following areas:

    a. Contextual and process factors related to the implementation of the program.
    b. The impact of contextual factors (i.e., both programmatic and student and teacher characteristics) on the outcomes of the program.
    c. Program effectiveness in meeting its student behavior change objectives.

6. The majority of Writing-to-Read teachers are implementing the program in an ideal fashion. All three evaluation measures indicate that teachers are competent and efficient in their use of the 14 program components.

7. An analysis of scores on the standardized Metropolitan Readiness Test (MRT) shows that Writing-to-Read students increased their reading composite subtest scores 31 percentile points from the pre-test to the post-test (from the 35th to 66th percentile).

8. Writing-to-Read students scored 7 percentile points higher on the reading composite subtest post-test of the MRT than a comparison groups of kindergarten students who did not have the Writing-to-Read program (66th percentile to 59th percentile).

9. Writing-to-Read students moved from the 4th to 5th stanine on the language subtest of the MRT from pre-test to post-test.

10. There was no difference between Writing-to-Read students and a comparison group on language subtest post-test scores on the MRT.

BACKGROUND AND PROJECT DESCRIPTION

Introduction

Purpose - The purpose of the Educational Technology program is to provide systemwide direction for the application of educational technology in improving instructional programs and services for students, pre-K through 12th grade.

Need - The development of new technologies in the area of education has led to the recognition that student learning could be improved through the acquisition and implementaion of new educational technologies. The DCPS Computer Literacy Five-Year Plan pointed to the need for coordination and direction of educational technology within DCPS and the structure of educational planning related to this area.

History -In 1982, the District of Columbia Public Schools (DCPS) Computer Literacy Planning Group developed the "Computer Literacy Five Year Plan SY 1983-87". The Division of Educational Technology was established to implement the plan and to organize other technologies, partially assisted by 1982-83 ECIA Chapter 2 funds. The project manager was hired in January 1983 and subsequently assigned staff members and ordered equipment for the project to begin during the 1983-84 school year.

The two major thrusts of the educational technology program during the 1983-84 school year were in computer literacy and in educational TV. Past evaluation records indicated that these two main aspects have been advanced through the planning and direction of the Educational Technology Office. The evaluations also showed that effective management practices have been demonstrated.

Description of the Project

Target Population -The target population for Educational Technology consists of 90,000 students in regular programs, special education, career development and continuing education, all teachers and administrators. The target populations for the present evaluation are (a) 7th grade mathematics and science teachers and students in 8 ITV pilot schools and (b) kindergarten students and teachers in 15 Writing-to-Read schools.

Staffing - The project manager remained with the Division during 1984-85 school year. A project coordinator was hired for ITV, but resigned in January 1985. There is a project coordinator and consultant for the Writing-To-Read Project.

Programs - The ITV program was designed to build a strong mathematics and science foundation at the beginning of the secondary level, i.e., the seventh grade. The specific objectives were (1) to increase the level of academic achievement in mathematics and science and (2) to improve students' attitudes towards mathematics and science. The program provided teachers with ITV programs in science and mathematics which have been identified as congruent with the Competency-Based-Curriculum (CBC) of the DCPS. Teachers received training in the use of the programs and used their own techniques and strategies to cover the material.

The Writing-to-Read program is a phonetic-based program designed to facilitate and extend children's use of the language acquired prior to entering school. Children use various technologies (e.g. typewriters, tape recorders, personal computers) to use and extend their personal vocabularies in writing their own compositions. Teachers are trained to use language development activities that develop self-management behaviors, positive attitudes and writing skills.

EXTERNAL EVALUATION DESIGN - PLANNING, MONITORING AND IMPLEMENTING (PMI) EVALUATION MODEL FOR DECISION-MAKING

The evaluation follows the Planning, Monitoring, and Implementing (PMI) Evaluation Model for Decision-Making which was developed by the Division of Quality Assurance, District of Columbia Public Schools. (See Appendix A.) The evaluation design which was developed at the beginning of the project year, consisted of the intended inputs, processes and outcomes on specially designed status report forms. The interim report distributed at the mid-point of the project cycle related, on the status report forms, agreements or discrepancies between intended and observed inputs and processes. This final report includes the interim report data brought up to date, plus the agreements and discrepancies between intended and observed outcomes for each objective. Supporting data are included in the appendix. Preceding the PMI status report forms is the results section which summarizes the agreements and discrepancies for each objective and states a general conclusion.

RESULTS

Evaluation Results - Narrative Summary

The results of the evaluation are summarized in this section. Following the narrative are the inputs, processes and outcomes on which this summary is based presented in the PMI reporting format. Supporting data are in the appendix.

Objective A: The Division of Educational Technology will advance instructional television in the DCPS as demonstrated by the implementation of the Instructional Television 7th grade Mathematics and Science Project (ITV) in 8 pilot schools.

This objective was met despite the mid-year resignation of the project assistant coordinator. This unexpected reduction in personnel forced the project coordinator to utilize other resources to conduct site visits and perform other evaluation tasks. The change in plan did not affect the drafting of an instructional manual which was written and distributed. According to the project coordinator, this manual, which matches Competency Based Curriculum (CBC) objectives with selected instructional television packages, has received favorable feedback from teachers.

However, the change in personnel may have interrupted communication between the project managers and the teachers in the field. This may account, in part, for the low return rate of a questionnaire designed to assess the teacher's implementation of the program. Because of the low return rate most aspects of the program's operation could not be accurately assessed. Nine questionnaires from four different schools were returned. Five respondents indicated they had received a copy of the ITV manual, while four indicated they had not. Only two respondents reported using ITV materials for at least 10 CBC objectives. Finally, comments like "tapes need to be contemporary"; "most objectives are not covered by the tapes"; and "send me an updated catalog" suggest that the manual may need to be expanded and updated.

The questionnaire focused on teachers' receipt of the ITV manual and frequency of its use. Further evaluation efforts should include some measurement of (a) academic achievement in mathematics and science due to the ITV program and (b) change in students' attitudes toward mathematics and science due to the ITV program.

Objective B: A majority of the DCPS kindergarten teachers in the Writing-to-Read program will demonstrate that they are implementing the program as designed, during the 1984-85 school year.

Three indicators were used to measure this objective. First, an "Innovation Configuration" diagram was developed by the project coordinator, project consultant, and members of the Chapter 2 evaluation team. This diagram, which defines the critical components of the Writing-to-Read program, operationally describes what the teacher should be doing to implement the program properly. Each of the 33 project teachers were interviewed and asked about their use of the program with special emphasis on the 14 program components.

The results of these interviews showed that the overwhelming majority of teachers were implementing the program in an acceptable fashion (See Appendix A). In fact, for 12 of the 14 components the majority of teachers were judged to be implementing the program in an "ideal" fashion. For example, 100% of the teachers were judged to be implementing the phonetics, individual attention, affect, and follow-up components in an ideal fashion. More than 90% of the teachers were ideal on the grouping, flow, pace, time, and self-management components.

Four components which were still within the bounds of meeting the objective, but which were less consistent in their implementation were start-up, records, use of equipment, and writing. This information may be useful in a diagnostic sense to improve program implementation and in the planning of follow-up workshops and training sessions for teachers new to the program. Teachers also varied in their reports of the use of the aide. Some teachers reported having no aide. This is an additional area that might be used diagnostically for improvement and training purposes.

The second indicator used to measure this objective is the "Level-of-Use" rating. This rating characterizes the teacher's use of the Writing-to-Read program according to eight descriptive categories. All 33 teachers were rated Level III or above which easily met the project objective (See Appendix B). Appendix B shows that not only did all teachers reach the objective but 32 of the 33 were using the Writing-to-Read program at Level IVA (Routine) and IVB (Refinement). Level IVA is defined as the state where use of the project has stabilized and few changes are made in ongoing use. Level IVB is defined as a state where the teacher is varying the use of the program somewhat to increase the impact on the students. They have moved beyond the point where day-to-day use is problematic, superficial, and unsure. Both of these ratings show that teachers in the project are using the program in a familiar and efficient manner.

The final indicator used to measure this objective was a project-designed questionnaire that asked teachers about their implementation of the program. The questionnaire, which was answered by 69% of the project teachers (24 of 35), focused on five areas of the project including writing, language development, typing, classroom management, and use of the aide.

On a 5-point scale where 5 is the most positive indicator, the mean of teachers' responses to eight writing questions was $\bar{X}$=4.16 suggesting an overall positive view and implementation of the writing portion of the program. Particularly noteworthy of the eight questions is the response to #1 ("Students practice their writing every day.") $\bar{X}$=4.79; and question #1 ("I am committed to the Writing-to-Read Program") $\bar{X}$=4.50. These two questions suggest that project teachers believe in, and use the Writing-to-Read Program.

Teachers reported using the language development games that supplement the program and using teacher, aide, or parent created games as well.

Teachers' responses to the questions about the typing component of the program averaged $\bar{X}$=4.33 (again, on a 5-point scale where 5 is the most positive response) suggesting that teachers have trained students to use the typewriter independently. In addition, 90% of the students were reported to write their stories longhand before typing them, in accordance with the plan of the Writing-to-Read program.

Teachers' responses to the 19 classroom management questions were uniformly positive, $\bar{X}$=4.61, indicating that teachers were implementing the program as designed. This series of questions included items concerning the progress charts, work journals, and tape recorders, all of which were vital to the program.

Finally, seven questions dealt with the function of the aide. Teachers' responses to these questions averaged $\bar{X}$=4.70 (again on a 5-point scale where 5 is the most positive indicator). Teachers also reported that aides received training in an overview of the Writing-to-Read program; operation of the computer; and the handling and storage of computer materials.

Taken as a whole, all five sections of the questionnaire showed that project teachers are implementing the Writing-to-Read program as it was designed.

The three indicators used to measure Objective B, the Innovation Configuration; the Level of Use interviews; and the project-designed questionnaire, all show that teachers are conducting the Writing-to-Read program in an efficient manner that is congruent with the design of the project. Therefore, Objective B was met.

Objective C: At the end of one year, students of DCPS kindergarten teachers using the Writing-to-Read program will increase their creative writing achievement at a greater than average rate, as measured by a standardized readiness test and a rated writing instrument.

The pre-reading skills composite subtest of the Metropolitan Readiness Test was substituted in place of the writing subtest after it was found that the optional writing test was not taken by all students. Students in the Writing-to-Read program increased their pre-reading skills composite subtest scores 31 percentile points over the course of the school year (from the 35th percentile to the 66th percentile). Writing-to-Read students also scored higher on the pre-reading skills composite subtest than a comparison group of students who did not have the Writing-to-Read program (66th percentile to 59th percentile).

On the language subtest, Writing-to-Read students moved from the 4th to the 5th stanine (language subtest scores are not reported in percentiles) from pre- to post-test. There was no difference between Writing-to-Read students and a comparison group of students on the language subtest. The absence of a difference may be due to the make up of the language subtest which includes quantitative reasoning skills, number-numeral correspondence, and part-whole relationships. These concepts, which were not a priority of the Writing-to-Read program, may have been learned equally by both groups of students. In contrast, the skills tapped by the pre-reading composite subtest were more the focus of the Writing-to-Read program.

Perhaps the only disappointment in an otherwise successful year was the lack of time and manpower necessary to rate the creative writing of the students. The project consultant had formed a panel of raters but the monitoring and demonstration duties of the program prevented the coordinator and the consultant from training the panel and testing the rating instrument. This kind of evaluation has great potential for discriminating between various levels of children's early writing and would be a valuable addition to the Writing-to-Read program. However, monitoring and demonstration will require even more time since the Writing-to-Read project will expand to twice as many schools in school year 1985-86. It is clear that some sort of additional personnel arrangement may be necessary to move beyond this year's partial achievement of this objective.

Decisions

This report will be forwarded to the project director, project manager, LEA Chapter 2 director, the Superintendent and the Board of Education to aid them in their decision-making concerning this project.

FINAL EVALUATION REPORT

PLANNING, MONITORING, AND IMPLEMENTING (PMI)
EVALUATION MODEL FOR DECISION-MAKING

Reporting Form

Goal: To provide systemwide direction to the application of educational technology

Objective A: The Division of Educational Technology will advance instructional television in the DCPS as demonstrated by the implementation of the Instructional Television 7th grade Mathematics and Science Project (ITV) in 8 pilot schools.

PART I

INPUTS

INTENDED	STATUS	OBSERVED
a. Project coordinator	Agreement	a. Dr. Kyo Jhin serves as the project coordinator.
b. Project assistant coordinator	Discrepancy	b. Ms. Joyce Kiley was the assistant coordinator until February 1985.
c. Project intern	Discrepancy	c. Sheila Robinson served as an intern temporarily for the project.
d. Sixteen (16) coordinators (mathematics and science)	Agreement	d. Examination of records indicated a list of 13 of the 16 mathematics and science coordinators.
e. Mathematics and science teachers of pilot school	Agreement	e. The project coordinator verified that approximately 30 math and science teachers served as contact teachers for the ITV project.

OBJECTIVE A

PART I (continued)

INPUTS

INTENDED	STATUS	OBSERVED
f. Film vendors	Agreement	f. The Chapter 2 evaluation team examined a list of vendors supplied by the project director.
g. Library media specialists	Agreement	g. Library media specialists are located in each school within the System.
h. Eight (8) pilot schools (junior high)	Agreement	h. A list containing the 8 pilot schools was examined. It is on file in the Chapter 2 office.
i. Competency Based Curriculum for 7th grade mathematics and science	Agreement	i. The CBC is an integral part of DCPS and copies are on file in the Chapter 2 office.
j. Media services	Agreement	j. Media services is a unit under the Division of Educational Technology that produces audio-visual presentations for the District of Columbia Public Schools.
k. Videotape equipment within pilot schools	Agreement	k. The project manager verified that there is adequate equipment in each pilot school.
l. 7th grade mathematics and science annotated guides	Agreement	l. Mathematics and science annotated guides for 7th grade were examined and are on file in the Chapter 2 office.
m. Evaluation results from 1983-84	Agreement	m. Interim and final report results on the Division of Educational Technology are on file in the Chapter 2 office.

OBJECTIVE A

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1.1 Using input from site visits, evaluation results from 1983-84, and interview data, the project coordinator will identify problems experienced by project teachers implementing the ITV 7th grade project.	Agreement	1.1 The Chapter 2 evaluation team examined copies of site visit reports containing this information.
1.2 The project coordinator will develop the 1st draft of the guidelines.	Agreement	1.2 The project coordinator verified that the first draft had been completed.
1.3 The project manager will review the 1st draft of the guidelines.	Agreement	1.3 The project coordinator verified that the project manager reviewed the first draft.
1.4 Using input from the project manager the project coordinator will develop the final draft of the guidelines.	Agreement	1.4 The Chapter 2 evaluation team examined a copy of final draft of the guidelines.
2.1 Mathematics and science coordinators will submit a list of all project teachers to the project coordinator.	Agreement	2.1 The project coordinator verified that approximately 30 math and science teachers served as contact teachers for the ITV project.
2.2 The project coordinator will contact the mathematics and science coordinators to arrange site visits.	Agreement	2.2 A member of the project director's staff scheduled the site visits.

† Processes numbered to correspond with outcomes

OBJECTIVE A

PART II (continued)

PROCESSES †

INTENDED	STATUS	OBSERVED
2.3 The project coordinators and the project intern will visit all pilot schools.	Agreement	2.3 A member of the project coordinator's staff made site visits to all schools as verified by an examination of site visit reports.
2.4 A letter will be sent to the mathematics and science contact persons of each pilot school by the project coordinator to request an inventory of working and non-working equipment for the ITV program.	Agreement	2.4 An assessment of ITV equipment operation was made at the time of the site visit.
2.5 An inventory of working and non-working equipment will be submitted to the project coordinator by the mathematics and science coordinators of each pilot school.	Agreement	2.5 An inventory of operational and non-operational equipment was made at the time of the site visit and submitted to the project director.
2.6 The project coordinator will ensure that at least one set of working equipment per subject matter is available within each pilot school.	Agreement	2.6 According to the project coordinator, all schools have working equipment except one where some equipment was stolen. Replacement equipment for this school has been ordered.
2.7 Mathematics and science contact persons will submit a checklist to the project coordinator verifying that all project teachers can operate the equipment within their school.	Agreement	2.7 A member of the project director's staff checked teacher's knowledge of equipment operation as part of the school site visit.

† Processes numbered to correspond with outcomes

OBJECTIVE A

PART II (continued)

PROCESSES †

INTENDED	STATUS	OBSERVED
2.8 Mathematics and science contact persons will encourage project teachers to use the resources by providing opportunities for the sharing of ideas and resources.	Agreement	2.8 The Chapter 2 evaluation team examined a workshop agenda for project teachers that included activities to facilitate the sharing of ideas and resources.
2.9 Mathematics and science contact persons will meet with the project coordinator periodically to facilitate communciation with the project teachers.	Agreement	2.9 A member of the project director's staff met with contact persons on an "as needed" basis.

† Processes numbered to correspond with outcomes

OBJECTIVE A

PART III

OUTCOMES

INTENDED	STATUS	OBSERVED
1. A copy of the manual to be distributed to the 16 coordinators in the 8 pilot schools during the 1985-86 academic year and submitted to the ECIA Chapter 2 Evaluation Unit by the project coordinator by June 30, 1985, will show that guidelines for the Instructional Television 7th grade mathematics and science project were developed.	Agreement	1. Copies of the ITV manual showing guidelines for the use of various media materials in coordination with CBC objectives were examined by the Chapter 2 evaluation team.
2. Analysis of questionnaires submitted to the ECIA Chapter 2 Evaluation Unit by the project coordinator will show that the majority of project teachers have implemented the program using videotapes for at least 10 of the mathematics and science CBC objectives.	Discrepancy	2. Only 9 questionnaires were returned, limiting the analysis of this objective. Of the 9, only 2 reported using videotapes for at least 10 of the math and science CBC objectives.

FINAL EVALUATION REPORT

PLANNING, MONITORING, AND IMPLEMENTATION (PMI)
EVALUATION MODEL FOR DECISION-MAKING

Reporting Form

Goal: To provide systemwide direction to the application of educational technology.

Objective B: A majority of the DCPS kindergarten teachers in the Writing-to-Read program will demonstrate that they are implementing the program as designed, during the 1984-85 school year.

PART I

INPUTS

INTENDED	STATUS	OBSERVED
a. Project coordinator	Agreement	a. Evaluation Team members have met with the project coordinator.
b. Project consultant	Agreement	b. Evaluation Team members have met with the project consultant.
c. Kindergarten teachers in 15 project schools	Agreement	c. The names of these teachers are on file in the project coordinator's office.
d. Writing-to-Read team composed of pre-primary and primary level teachers with the principal invited	Agreement	d. The project coordinator verified that the teams have been established.
e. Students of kindergarten teachers in 15 schools	Agreement	e. "Demographic Profile Sheets" containing information about the project in each school, including number of students, are on file in the project coordinator's office.
f. Clerical support	Discrepancy	f. There are inadequate clerical services at the present office site.

OBJECTIVE B

PART I (continued)

INPUTS

INTENDED	STATUS	OBSERVED
g. Sufficient space for training	Discrepancy	g. There was no specific space designated for training. The project coordinator arranged to set up a room for this purpose next to the Writing-to-Read Lab at Martin Luther King Elementary School
h. Sufficient office space for project administration	Agreement	h. Although the office space is adequate in size, it is located in a noisy part of the building making meetings difficult.
i. Writing-to-Read centers in the 15 project schools	Agreement	i. The project coordinator verified that centers are located in 15 schools.
j. Three IBM personal computers at each project school (except two at Murch and two at Syphax)	Agreement	j. The project coordinator verified that three IBM personal computers are in all schools except two.
k. Six Selectric typewriters (except four at Murch and four at Syphax) in each school	Agreement	k. The project coordinator verified that typewriters were in the schools.
l. Three tape recorders (except two at Murch and two at Syphax) for the work journal station	Agreement	l. The project coordinator verified that tape recorders were in the schools.
m. Two tape recorders for the library listening station	Agreement	m. The project coordinator verified that tape recorders for the library listening stations were in the schools.
n. Language development games	Agreement	n. The number and location of language development games vary from school to school.
o. Teacher Guidelines for the Writing-to-Read system	Agreement	o. The IBM Manual, containing teacher guidelines, is on file in the Evaluation Unit.

OBJECTIVE B

PART I (continued)

INPUTS

INTENDED	STATUS	OBSERVED
p. Adequate materials and supplies	Agreement	p. The project coordinator verified that the materials necessary for the program were adequate.
q. Levels-of-Use (LoU) protocols	Agreement	q. LoU protocols are on file in the Evaluation Unit.
r. Released time for staff development	Discrepancy	r. Released time was requested but not granted. The project coordinator arranged a staff development (1-23-85) attended by 33 of the 36 project teachers.

OBJECTIVE B

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1.1 Near the beginning of the school year, the project coordinator will send a letter to all principals advising them of project procedures.	Agreement	1.1 A letter to principals (8/27/84) updating them about the Writing-to-Read system for SY 84/85 is on file in the Evaluation Unit.
1.2 Near the beginning of the school year team meetings arranged by the project coordinator will be held at each school to review procedures, the management system and evaluation.	Agreement	1.2 The project coordinator verified the meetings through copies of agendas, sign-in sheets, and personal notes.
1.3 During October, kindergarten teachers, new to the program will receive at least two days of training, arranged by the project coordinators.	Agreement	1.3 The agenda for this staff development (10/29-30/84) giving an overview of the system, specific instructions about the reading stations, and descriptions of the Writing-to-Read management system is on file in the Evaluation Unit.
1.4 Before November 1, 1985, teachers will work with students in small groups preparing them to work in the Writing-to-Read center, by showing them and practicing activities such as how to operate a tape recorder, how to move from station to station, and how to use their work journals.	Agreement	1.4 The project coordinator verified through her personal observations that this preparation had taken place.
1.5 Teachers will use the Teacher Guidelines provided by the program.	Agreement	1.5 The project coordinator verified through her personal observations that this preparation had taken place.

† Processes numbered to correspond with outcomes

OBJECTIVE B

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1.6 Beginning in November, teachers will present the program to the students in the Writing-to-Read centers.	Agreement	1.6 Members of the Evaluation Team observed the program at two schools.
1.7 The project coordinator and/or project consultant will monitor every school program at least once a month.	Discrepancy	1.7 Three (3) resource teachers hired under funds from IBM performed this function the previous year. This year, however, because of the eliminaton of these staff the project coordinator had to undertake this function. An increase in administrative duties (demonstrating the program to many visitors and observers) combined with the project coordinator taking care of all the clerical services for the project (there was no provision for clerical services) did not allow sufficient time for the once-a-month monitoring. The project coordinator did, however, conduct group staff developments and distributed notices updating teachers about the project in place of the monitoring.
1.8 By January 1, 1985 project personnel will provide the ECIA Chapter 2 Evaluation Unit with a list of project components in order to develop an innovation configuration diagram.	Agreement	1.8 A copy of project components is on file in the Evaluation Unit.

† Processes numbered to correspond with outcomes

OBJECTIVE B

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1.9 In the Spring 1985, ECIA Chapter 2 Evaluation Unit trained personnel will interview a sampling of project teachers, using innovation configuration diagrams and Levels-of-Use (LoU) rating material.	Agreement	1.9 Evaluation team members interviewed all project teachers during May and June 1985.
2.1 The project coordinator, project consultant and ECIA Chapter 2 Evaluation Unit personnel will construct a teacher questionnaire.	Agreement	2.1 The teacher questionnaire was jointly constructed and a copy is on file in the Evaluation Unit.
2.2 The project coordinator will distribute the teacher questionnaires in the Winter and in the Spring of the 1984-85 school year.	Agreement	2.2 The questionnaire was distributed in March 1985.
2.3 Project teachers will complete the teacher questionnaires and return them to the project coordinator.	Agreement	2.3 Sixty-nine percent of the teachers (24 of 35) completed and returned the questionnaires to the evaluation team.
2.4 The project coordinator will give the teacher questionnaires to the ECIA Chapter 2 Evaluation Unit personnel by June 30, 1984, for data analysis.	Agreement	2.4 The evaluation team received the questionnaires by June 30th.

† Processes numbered to correspond with outcomes

OBJECTIVE B

PART II

OUTCOMES

INTENDED	STATUS	OBSERVED
1. An analysis of interview data completed by the ECIA Chapter 2 Evaluation Unit by June 1985 will show that a majority of the project kindergarten teachers are implementing the program as designed, measured as follows: a. innovation configuration diagrams will show all areas in the acceptable range; b. Levels-of-Use (LoU) ratings will be at least at Level III (Mechanical Use);	Agreement	1. a. Analysis of the innovation configuration diagram showed that teachers are implementing the Writing-to-Read program in the acceptable range. b. Levels-of-Use (LoU) ratings showed that the majority of teachers were at Level IVA (Routine) and IVB (Refinement).
2. An analysis of results of completed project-designed teacher questionnaires submitted to the ECIA Chapter 2 Evaluation Unit by the project coordinator by June 1985 will show that the majority of project teachers state that they are implementing all parts of the program as designed.	Agreement	2. Results of the 5 sections of the questionnaire showed the project teachers were implementing the Writing-to-Read program as it was designed.

FINAL EVALUATION REPORT

PLANNING, MONITORING, AND IMPLEMENTATION (PMI)
EVALUATION MODEL FOR DECISION-MAKING

Reporting Form

Goal: To provide systemwide direction to the application of educational technology.

Objective C: At the end of one year, students of DCPS kindergarten teachers using the Writing-to-Read program, will increase their creative writing achievement at a greater than average rate, as measured by a standardized readiness test and a rated writing instrument.

PART I

INPUTS

INTENDED	STATUS	OBSERVED
Inputs a through o are the same as for Objective B. Please see page 15.		
p. Project instructional aides, one per center	Agreement	p. School profiles containing information on instructional aides were examined by evaluation team members.
q. Persons, knowledegable about writing, to serve on the scoring panel.	Agreement	q. The project consultant verified that a group of educators were available for the scoring panel.
r. Writing-sample rating instrument	Agreement	r. The project coordinator and consultant have developed a rating instrument which is on file in the Chapter 2 Evaluation Unit.
s. Comparison Group	Agreement	s. A comparison group of students was available from the computer printout results of the Metropolitan Readiness Test.

OBJECTIVE C

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1.1 Project students will spend at least one hour per day in the center working on project activities.	Agreement	1.1 Copies of writing lab schedules for each class were examined by members of the evaluation team.
1.2 The teacher will perform as a facilitator providing individual assistance as needed.	Agreement	1.2 This was observed at two sites by members of the evaluation team and at other schools by the project coordinator.
1.3 The aides will assist the students at the stations as needed.	Agreement	1.3 This was observed at two sites by members of the evaluation team and at other schools by the project coordinator.
1.4 The children will follow the prescribed program by working at the computer in pairs, performing follow-up activities at a Work Journal station, and applying language arts skills at a language development station.	Agreement	1.4 This was verified through observation of the classrooms and examination of the Work Journals by evaluation team members.
1.5 The project coordinator will arrange an awards program in May to honor the children selected by their Writing-to-Read team as having achieved the most in writing.	Agreement	1.5 A member of the evaluation team attended the awards program which was held on May 16, 1985 at Winston Elementary School.
1.6 Project students will take the Metropolitan Readiness Test as part of the City-wide Student Assessment, in October 1984 and again, in a special session in the spring.	Agreement	1.6 Project students took the Metropolitan Readiness Test in the Fall and Spring semesters.

† Processes numbered to correspond with outcomes

OBJECTIVE C

PART II (continued)

PROCESSES †

INTENDED	STATUS	OBSERVED
1.7 The project coordinator will provide the ECIA Chapter 2 Evaluation Unit with the names and student ID numbers of all project students so that Metropolitan Readiness Test results can be retrieved from the computer.	Agreement	1.7 The names and I.D. numbers of all project students are on file in the Evaluation Unit.
2.1 The project coordinator and consultant will establish a panel of raters to score the writing samples, using a project developed instrument.	Agreement	2.1 The project consultant verified that raters from area educational institutions were available.
2.2 The project coordinator and consultant will train the raters, practicing until they have reached a reliability coefficient (i.e. of inter-observer agreement) of at least .80.	Discrepancy	2.2 This process did not take place due to time constraints.
2.3 The panel will score samples of writing from the project students and from a matched comparison group.	Discrepancy	2.3 This process did not take place due to time constraints.
2.4 Project coordinator will provide ECIA Chapter 2 Evaluation Unit with the rating-scale scores.	Discrepancy	2.4 This process did not take place since the panel did score the samples.

† Processes numbered to correspond with outcomes

OBJECTIVE C

PART III

OUTCOMES

INTENDED	STATUS	OBSERVED
1. Analysis of the results of the Metropolitan Readiness Test administered in the Fall of 1984 will show that kindergarteners using the Writing-to-Read program increased their achievement at a greater than average rate as follows:		
a. There will be a higher percentile rating on post-test scores than on pre-test scores on the pre-reading skills composite subtest.	Agreement	1.a. Writing-to-Read students scored at the 35th percentile on the pre-test and the 66th percentile on the post-test.
b. There will be a higher percentile rating on project students' scores than on comparison group students' scores on the pre-reading skills composite subtest.	Agreement	b. Writing-to-Read students scored at the 66th percentile; a comparison group of students scored at the 59th percentile.
c. There will be a higher percentile rating on post-test scores than on pre-test scores on the language subtest.	Agreement	c. Writing-to-Read students scored at the 4th stanine on the pre-test and at the 5th stanine on the post-test.
d. There will be higher percentile rating on project students' scores than on comparison group students' scores on the language subtest.	Discrepancy	d. Both Writing-to-Read students and a comparison group of students scored at the 5th stanine.

OBJECTIVE C

PART III (continued)

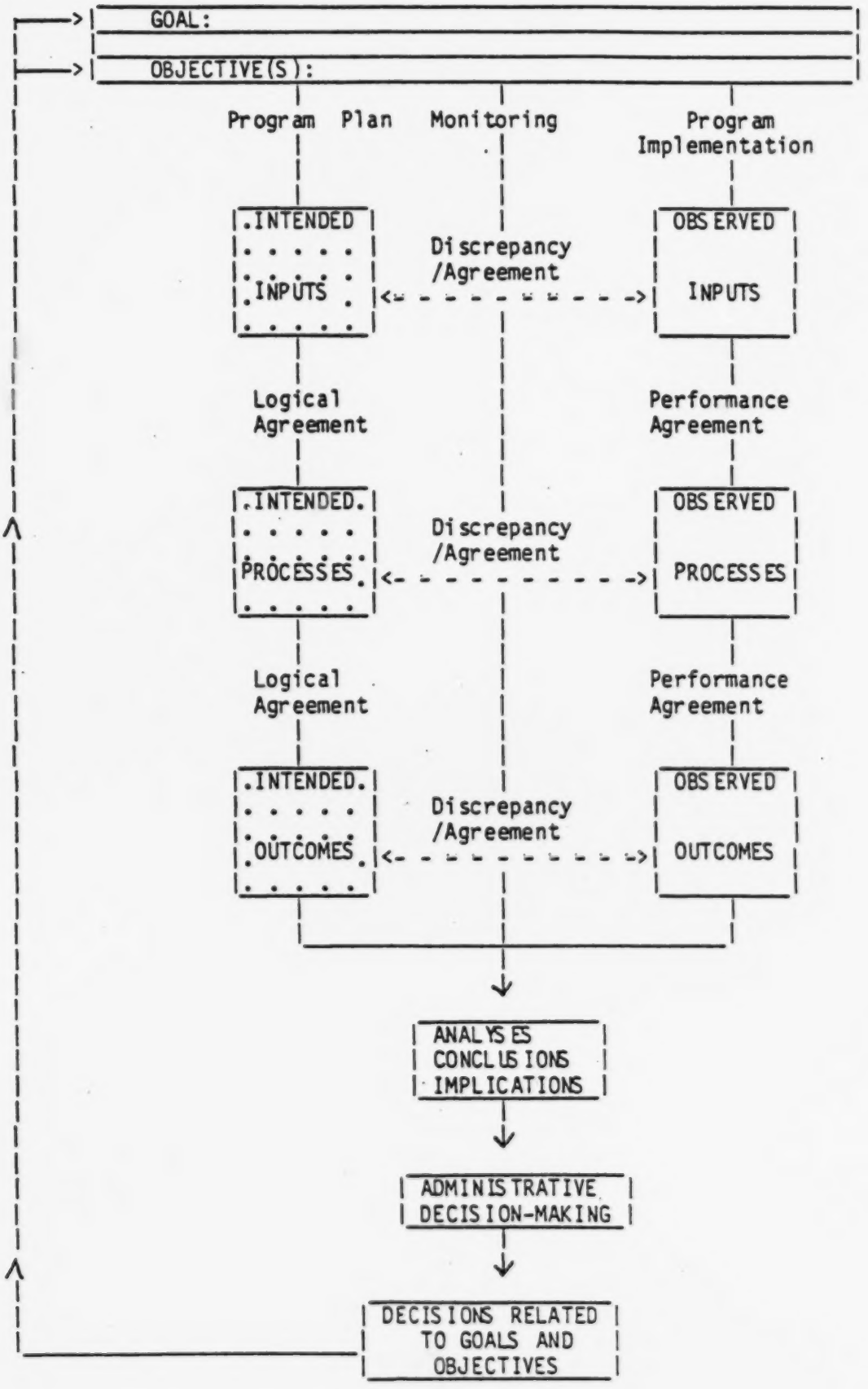
OUTCOMES

INTENDED	STATUS	OBSERVED
2. Results submitted to the ECIA Chapter 2 Evaluation Unit by the project coordinator by June 30, 1985, of findings of a panel of experts trained to rate students' writing samples, will show that kindergarteners using the Writing-to-Read program increased their writing ability at a greater then average rate as follows: a. On a longitudinal study including at least three measures from beginning to end of year, there will be a steeper slope plotted on scores of the project students than on those of a comparison group. b. Final scores on samples of writing of project students will be significantly higher than those of a comparison group.	Discrepancy	2. Due to time and manpower allocated to other project functions this objective was not met.

APPENDIX A

EVALUATION MODEL SCHEMA

EVALUATION MODEL SCHEMA



APPENDIX B

TEACHERS' IMPLEMENTATION OF WRITING-TO-READ PROGRAM: CONFIGURATION CHECKLIST

APPENDIX B

Teachers' Implementation of Writing-to-Read Program:
Configuration Checklist

Number of Teachers at 3 Levels

Component	Ideal	Acceptable	Unacceptable
Student Grouping	32	1	
Start-Up	5	23	5
Flow of Movement	28	5	
Student Pacing	32	1	
Time	25	6	2
Recordkeeping	12	20	1
Use of Equipment	22	11	
Writing	25	8	
Use/Mastery of Phonics	33		
Individual Instruction	33		
Self-Management	31	2	
Affect	33		
Teacher Aide*	25	3	3
Follow-up	33		

APPENDIX C

TEACHERS' IMPLEMENTATION OF WRITING-TO-READ PROGRAM: LEVELS OF USE INTERVIEWS

APPENDIX C
Teachers' Implementation of Writing-to-Read Program:
Levels-of-Use Interviews

Levels		No. of Teachers
LEVEL 0:	NON-USE: State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.	
LEVEL 1:	ORIENTATION: State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value orientation and its demands upon user and user system.	
LEVEL 2:	PREPARATION: State in which the user is preparing for first use of the innovation.	
LEVEL 3:	MECHANICAL USE: State in which the user focuses most effort on the short term day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. Users is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superfical use.	1
LEVEL 4A:	ROUTINE: Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.	22
LEVEL 4B:	REFINEMENT: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short and long-term consequences for clients.	10
LEVEL 5:	INTEGRATION: State in which user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.	
LEVEL 6:	RENEWAL: State in which the user re-evaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.	
	TOTAL	33

APPENDIX D

TEACHER SURVEY: WRITING QUESTIONS

Teacher Survey: Writing Component Questions

Item	(5) Always		(4) Often		(3) Sometimes		(2) Rarely		(1) Never		(0) No Response		Mean
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
1. Students practice their writing daily	20	83.3	3	12.5	1	4.2	0	0.0	0	0.0	0	0.0	4.79
2. Students write using their own thoughts and ideas	5	20.8	15	62.5	3	12.5	0	0.0	0	0.0	1	4.2	4.09
3. Students correct their written work without erasing	4	16.7	6	25.0	13	54.2	1	4.2	0	0.0	0	0.0	3.54
4. Students edit their writing	3	12.5	8	33.3	7	29.2	3	12.5	0	0.0	3	12.5	3.52
Item	(5) Strongly Agree		(4) Often		(3) Sometimes		(2) Rarely		(1) Strongly Disagree		(0) No Response		Mean
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
5. Students learn from the Writing-to-Read Program	8	33.3	13	54.2	3	12.5	0	0.0	0	0.0	0	0.0	4.21
6. I enjoy using the Writing-to-Read Program	11	45.8	9	37.5	4	16.7	0	0.0	0	0.0	0	0.0	4.29
7. I am committed to the Writing-to-Read Program	15	62.5	6	25.0	3	12.5	0	0.0	0	0.0	0	0.0	4.50
8. I am comfortable with the phonetic spelling emphasis of the Writing-to-Read Program	13	54.2	8	33.3	1	4.2	1	4.2	1	4.2	0	0.0	4.29
Total	79	41.1	68	35.4	35	18.2	5	2.6	1	0.5	4	2.1	4.16

APPENDIX E

TEACHER SURVEY: TYPING QUESTIONS

APPENDIX E

Teacher Survey: Typing Component Questions

Item	(5) All		(4) Most		(3) About Half		(2) A Few		(1) None		(0) No Response		Mean
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
1. How often do students use the typewriter?	11	45.8	12	50.0	0	0.0	0	0.0	0	0.0	1	4.2	4.48
2. How many students use the typewriter?	19	79.2	5	20.8	0	0.0	0	0.0	0	0.0	0	0.0	4.79
3. How many students put in their own paper?	15	62.5	8	33.3	1	4.2	0	0.0	0	0.0	0	0.0	4.58
4. How many students use the space bar correctly?	4	16.7	13	54.2	6	25.0	0	0.0	0	0.0	1	4.2	3.91
5. How many students use the upper/lower case keys?	0	0.0	11	45.8	11	45.8	0	0.0	0	0.0	2	8.3	3.50
6. How many students use the on/off switch by themselves?	15	62.5	8	33.3	1	4.2	0	0.0	0	0.0	0	0.0	4.58
7. How many students use the return key?	10	41.7	11	45.8	2	8.3	0	0.0	0	0.0	1	4.2	4.35
Total	74	44.0	68	40.5	21	12.5	0	0.0	0	0.0	5	3.0	4.33

APPENDIX F

TEACHER SURVEY: MANAGEMENT QUESTIONS
(PT.1 AND PT.2)

APPENDIX F

Teacher Survey - Classroom Management Questions (Pt.1)

Item	(5) Always		(4) Often		(3) Sometimes		(2) Rarely		(1) Never		(0) No Response		Mean
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
1. Students work in pairs	13	54.2	10	41.7	1	4.2	0	0.0	0	0.0	0	0.0	4.50
2. If students are mismatched they are repaired	21	87.5	3	12.5	0	0.0	0	0.0	0	0.0	0	0.0	4.88
3. Assignment sheets are used appropriately	17	70.8	6	25.0	0	0.0	1	4.2	0	0.0	0	0.0	4.62
4. Students use progress charts	16	66.7	4	16.7	3	12.5	0	0.0	0	0.0	1	4.2	4.57
5. Students use Work Journals	23	95.8	1	4.2	0	0.0	0	0.0	0	0.0	0	0.0	4.96
6. Class uses Writing-to-Read program daily	22	91.7	2	8.3	0	0.0	0	0.0	0	0.0	0	0.0	4.92
7. Students complete each cycle at the computer	23	95.8	1	4.2	0	0.0	0	0.0	0	0.0	0	0.0	4.96
8. Students complete each cycle in the Work Journal	22	91.7	1	4.2	0	0.0	0	0.0	0	0.0	1	4.2	4.96
9. Progress charts are marked appropriately	17	70.8	6	25.0	1	4.2	0	0.0	0	0.0	0	0.0	4.67
10. Mastery tests for each cycle are completed	22	91.7	2	8.3	0	0.0	0	0.0	0	0.0	0	0.0	4.92

Teacher Survey - Classroom Management Questions (Pt.2)
(continued)

Item	(5) Always		(4) Often		(3) Sometimes		(2) Rarely		(1) Never		(0) No Response		Mean
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
11. Make-words activities are completed at the computer	22	91.7	2	8.3	0	0.0	0	0.0	0	0.0	0	0.0	4.92
12. Make-words activities are completed in the Work Journals	23	95.8	1	4.2	0	0.0	0	0.0	0	0.0	0	0.0	4.96
13. Complete Work Journals are reviewed by teacher and sent home	24	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5.00
14. Students are monitored to see that they do the series of activities for one day's lesson	23	95.8	1	4.2	0	0.0	0	0.0	0	0.0	0	0.0	4.96
Item	(5) All		(4) Most		(3) About Half		(2) A Few		(1) None		(0) No Response		Mean
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
15. How many students know how to select a tape?	4	16.7	13	54.2	5	20.8	2	8.3	0	0.0	0	0.0	3.79
16. How many students know how to put tape in a recorder?	7	29.2	11	45.8	4	16.7	0	4.2	0	0.0	0	0.0	4.00
17. How many students know how to play a tape?	9	37.5	11	45.8	4	16.7	0	0.0	0	0.0	0	0.0	4.21
18. How many students know how to rewind a tape?	6	25.0	14	58.3	2	8.3	2	8.3	0	0.0	0	0.0	4.00
19. How many students know how to replace tape to storage?	6	25.0	11	45.8	4	16.7	3	12.5	0	0.0	0	0.0	3.83
Total	320	70.2	100	21.9	25	5.5	9	2.0	0	0.0	2	0.4	4.61

APPENDIX G

TEACHER SURVEY: TEACHER AIDE QUESTIONS

APPENDIX G

Teacher Survey: Function of Teacher Aide Questions

Item	(5) Always		(4) Often		(3) Sometimes		(2) Rarely		(1) Never		(0) No Response		Mean
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
1. Aides handle all computer materials properly	19	79.2	2	8.3	1	4.2	0	0.0	0	0.0	2	8.3	4.82
2. Aides monitor record-keeping for computer and Work Journal	13	54.2	5	20.8	2	8.3	0	0.0	0	0.0	4	16.7	4.55
3. Aides help students and answer questions	19	79.2	2	8.3	1	4.2	0	0.0	0	0.0	2	8.3	4.82
4. Aides direct the students to the Work Journal at the end of a computer lesson	14	58.3	5	20.8	1	4.2	0	0.0	1	4.2	3	12.5	4.48
5. Aides are supportive to the teacher	18	75.0	4	16.7	0	0.0	0	0.0	0	0.0	2	8.3	4.82
6. Aides help in preparation and maintenance of the lab	19	79.2	1	4.2	1	4..2	0	0.0	1	4.2	2	8.3	4.68
7. Aides help students with equipment and supplies	16	66.7	5	20.8	1	4.2	0	0.0	0	0.0	2	8.3	4.68
TOTAL	118	70.2	24	14.3	7	4.2	0	0.0	2	1.2	17	10.1	4.70